A.D. 1852 . . . . N° 1167.

SPECIFICATION

OF

JOHN ANDERSON.

HEATING AND VENTILATING APARTMENTS, AND REMEDYING SMOKY CHIMNEYS.

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A.D. 1852 . . . . N° 1167.

Heating and Ventilating Apartments, and Remedying Smoky Chimneys.

LETTERS PATENT to John Anderson, of Rugby, in the County of Warwick, Ironfounder, for the Invention of "HEATING AND VENTILATING APARTMENTS," AND FOR REMEDYING SMOKY CHIMNIES BY A RADIANT VENTILATING GRATE."

Sealed the 9th April 1853, and dated the 27th December 1852.

PROVISIONAL SPECIFICATION left by the said John Anderson at the Office of the Commissioners of Patents, with his Petition, on the 27th December 1852.

I, JOHN ANDERSON, of Rugby, in the County of Warwick, Ironfounder, do hereby declare the nature of the said Invention for "HEATING AND VENTILATING APARTMENTS, AND FOR REMEDYING SMOKY CHIMNIES BY A RADIATING VENTILATING GRATE," to be as follows:—

The fire in a grate formed of irons bars in a series of concentric curves, radiates upon a steel, iron, brass, or copper ash box, placed over an air chamber under the grate. This chamber is supplied with air by a tube communicating with the external air. As the air in the apartment ascends the chimney, the external air enters the chamber under the grate through the tube, and being heated passes into chambers formed at the back of the fire. From the latter chambers the air enters the apartment through ventilators placed in the cheeks or sides of the fire place, thus causing a constant supply of rarefied air in the apartment.

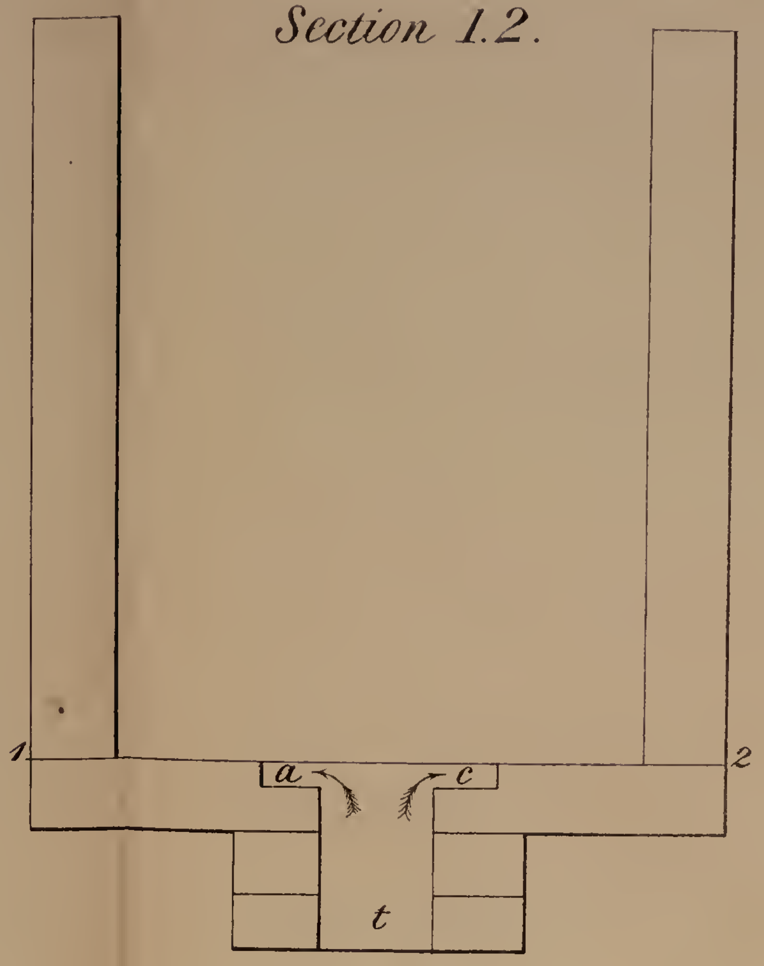
SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said John Anderson in the Great Seal Patent Office on the 16th June 1853.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, John Anderson of Rugby, in the County of Warwick, Ironfounder, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-seventh day of December, in the year of our Lord One thousand eight hundred and fifty-two, in the sixteenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John Anderson, Her special licence that I, the said John Anderson, my executors, administrators, and assigns, or such others as I, the said John Anderson, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "Heating and Ventilating Apartments, and for Remedying Smoky Chimnies by a Radiant Ventilating Grate," upon the condition (amongst others) that I, the said John Anderson, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said John Anderson, do hereby

Section 1.2.



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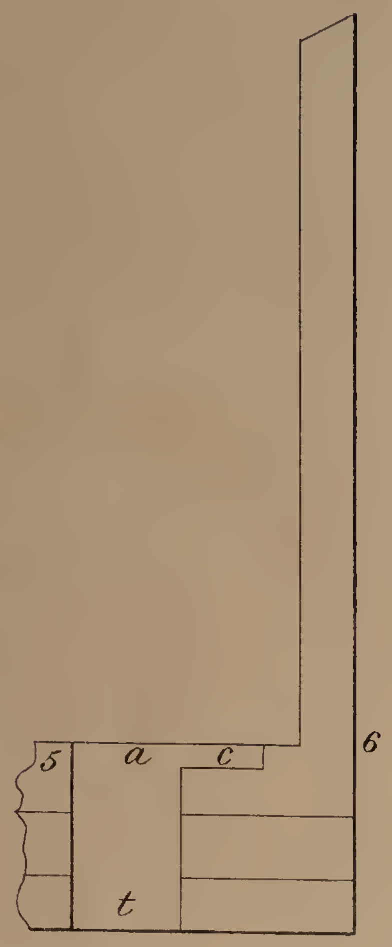

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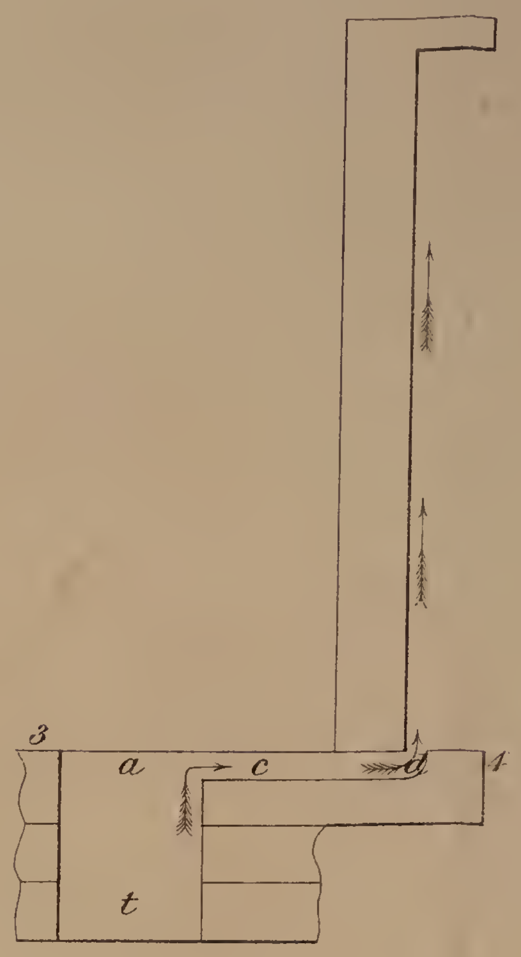
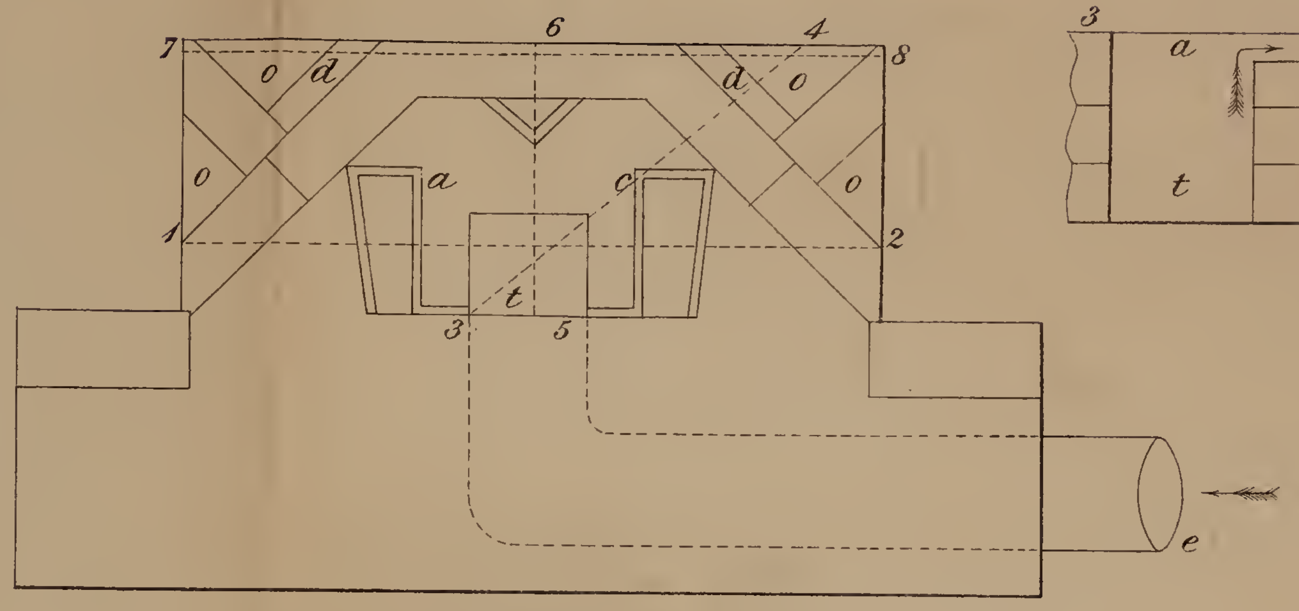
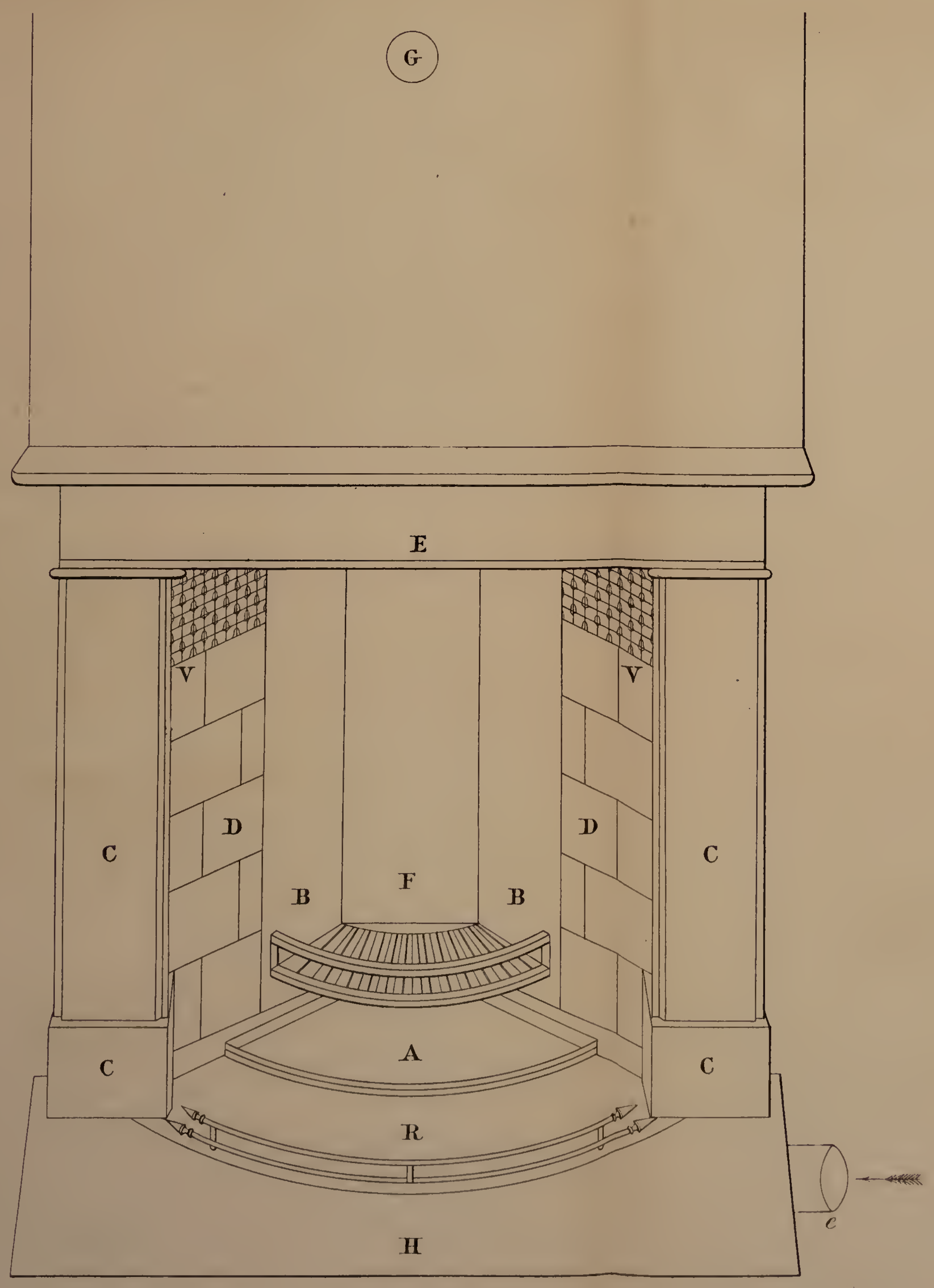




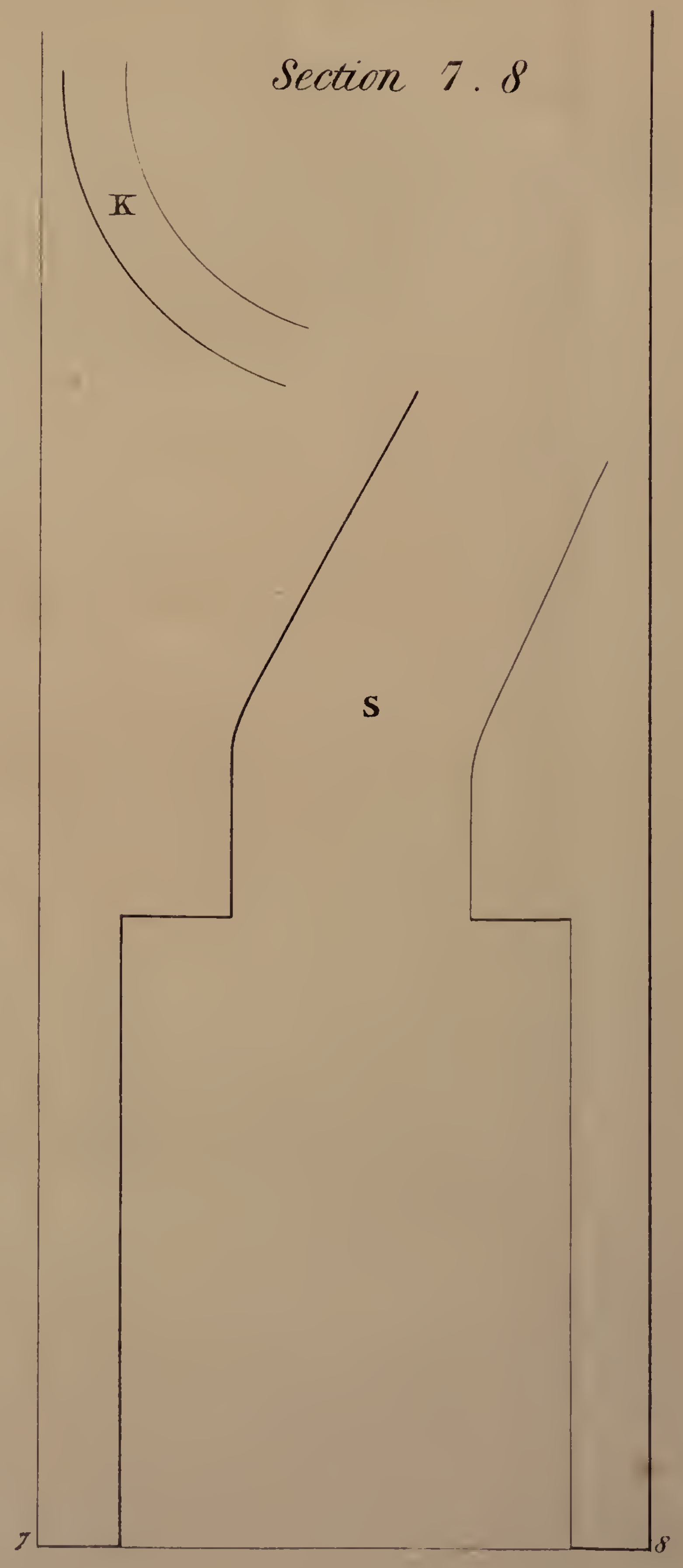
PLAN 1.
PLAN OF HEARTH & AIR CHAMBERS.

Scale 1 Inch to 1 Foot



ELEVATION
PLAN 2.

Section 7.8



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declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawings, and to the letters and figures marked thereon (that is to say):

The fire in a grate formed of iron bars in a series of concentric curves radiates upon a steel, iron, brass, or copper ash box placed over an air chamber under the grate. This chamber is supplied with air by a tube communicating with the external air. As the air in the apartment ascends the chimney, the external air enters the chamber under the grate through the tube, and being heated passes into chambers formed at the back of the fire. From the latter chambers the air enters the apartment through ventilators placed in the cheeks or sides of the fire place, thus causing a constant supply of rarified air in the apartment, and is constructed in the following manner:—The foundation of the grate and the back part of the hearth is to be made of bricks, with an air chamber *t*, *a*, *c*, Plan 1, under the fire grate. A tube *e*, Plan 1, formed of glazed stone ware pipes or other smooth material, to connect the air chamber *t*, *a*, *c*, with the external air, by passing from the bottom of the air chamber *t*, *a*, *c*, under the hearth H, Plan 2, in an horizontal direction to the outside of the building, or fixed or built in the wall parallel with the smoke flue or chimney S. Section 7, 8, the top end of the tube opening above the roof. The air chamber *t*, *a*, *c*, to have an opening on each side *d*, *d*, Plan 1, Section 3, 4, communicating with two other air chambers *o*, *o*, *o*, *o*, Plan 1, on each side or back of the fire. The chambers *o*, *o*, *o*, *o*, to have ventilators V, V, Plan 2, placed in the sides or cheeks D, D, Plan 2, made to open and shut to admit the external air entering at *e*, Plan 1, through the air chambers *t*, *a*, *c*, *o*, *o*, *o*, *o*, Plan 1, into the apartment at V, V, Plan 2. The air chamber *t*, *a*, *c*, to be covered with a metallic plate let in so as to make the hearth under the ash box A, Plan 2, level. Over the metallic plate and air chamber *t*, *a*, *c*, the grate formed of a series of portable iron bars laid on two curved bearers in concentric lines is to be fixed. The curved bearers are to be fixed in the sides and back of the fire place. The sides or cheeks B, B, Plan 2, and back of the fire place F, Plan 2, from the hearth H, Plan 2, to the head of the chimney piece E, to be made of fire brick. The sides or cheeks D, D, Plan 2, between B, B, and the chimney piece C, C, from the ventilators V, V, to the hearth H, Plan 2, to be polished metallic reflectors. The ash box A, Plan 2, to be made either of steel, iron, brass, or copper. A polished metallic reflector R, to be placed on the hearth H, Plan 2. The external air entering the tube at *e*, will, whilst passing through the chamber *t*, *a*, *c*, become heated by the vertical rays of the fire, which fall upon the ash box A, over the metallic plate covering the air chamber *t*, *a*, *c*, then passing through *d*, *d*, into the chambers *o*, *o*, *o*, *o*, will, whilst passing through the latter chambers, become more heated by the fire in the grate, and entering the apartment at V, V, will cause a constant supply of pure rarified air in the apartment; and thus the heat of the fire will be greatly increased, and equally diffused in the apartment by radiation, reflection, and conduction. The vitiated air will escape from the apartment by a ventilator G, Plan 2, placed above the chimney piece near to the ceiling by a metal tube K, Section 7, 8, fixed or built in the wall parallel with the smoke flue or chimney S; and the smoke will ascend the smoke flue or chimney S, by the external atmospheric pressure on the tube *e*, Plan 1, which will cause an upward current in the smoke flue or chimney.

In witness whereof, I, the said John Anderson, have hereunto set my hand and seal, this Thirteenth day of June, in the year of our Lord One thousand eight hundred and fifty-three.

JOHN ANDERSON. (L.S.)

Witness,
JOHN S. SAVAGE.

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Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.